

WHAT IS CLAIMED IS:

1     1.     A data exchange system comprising:

2             a motor vehicle including a first data processing  
3     device;

4             an input/output terminal external and separate from  
5     said motor vehicle;

6             a portable authorization device required for enabling  
7     operation of said motor vehicle; and

8             a portable data exchange device that is incorporated  
9     in said authorization device and that is adapted to carry  
10    out a respective data communication respectively with said  
11    input/output terminal and with said first data processing  
12    device to thereby carry out a data exchange between said  
13    first data processing device and said input/output  
14    terminal.

1     2.     The data exchange system according to claim 1, wherein said  
2     authorization device is a vehicle key.

1     3.     The data exchange system according to claim 2, wherein said  
2     motor vehicle includes a mechanically operative ignition  
3     lock, and said vehicle key is a mechanically operative  
4     ignition key that mates with said ignition lock so as to  
5     unlock and operate said ignition lock.

1     4.     The data exchange system according to claim 3, wherein said  
2     ignition key includes a key blade protruding from a hand

grip, and said data exchange device comprises electronic circuit components encased within said hand grip.

5. The data exchange system according to claim 3, wherein said ignition key includes a key blade protruding from a hand grip having a recess therein, and said data exchange device comprises electronic circuit components integrated on a smart card that is removably received in said recess in said hand grip.

6. The data exchange system according to claim 2, wherein said motor vehicle includes an electronically operative ignition lock, and said vehicle key is an electronically operative key that stores authorization data and communicates said authorization data to said ignition lock to unlock and operate said ignition lock.

7. The data exchange system according to claim 1, wherein said authorization device is a chip card that stores authorization data required for enabling operation of said motor vehicle, and said data exchange device comprises electronic circuit components integrated on said chip card.

8. The data exchange system according to claim 1, wherein at least one said data communication is only a uni-directional data communication.

1     **9.**     The data exchange system according to claim 1, wherein at  
2             least one said data communication is a bi-directional data  
3             communication.

1     **10.**    The data exchange system according to claim 1, wherein said  
2             data exchange device stores vehicle-specific data that are  
3             specific to said motor vehicle.

1     **11.**    The data exchange system according to claim 10, wherein  
2             said data exchange device further stores driver-specific  
3             data that are specific to a particular driver of said motor  
4             vehicle to whom said authorization device is allocated.

1     **12.**    The data exchange system according to claim 1, wherein said  
2             data exchange device stores driver-specific data that are  
3             specific to a particular driver of said motor vehicle to  
4             whom said authorization device is allocated.

1     **13.**    The data exchange system according to claim 1, wherein said  
2             data exchange device comprises a memory and a data  
3             input/output arrangement including an input portion and an  
4             output portion.

1     **14.**    The data exchange system according to claim 13, wherein  
2             said motor vehicle further includes a second data  
3             processing device, and said memory includes a first memory  
4             area that is allocated to said first data processing device  
5             and a second memory area that is distinct from said first

memory area and that is allocated to said second data processing device.

15. The data exchange system according to claim 13, wherein said input portion of said data input/output arrangement comprises a receiver and an antenna connected thereto adapted to receive electromagnetic waves.

16. The data exchange system according to claim 13, wherein said output portion of said data input/output arrangement comprises a transmitter and an antenna connected thereto adapted to transmit electromagnetic waves.

17. The data exchange system according to claim 13, wherein said data input/output arrangement comprises an antenna and a transmitter/receiver connected thereto adapted to transmit and receive electromagnetic waves according to the Bluetooth specification.

18. The data exchange system according to claim 13, wherein at least one of said input portion and said output portion of said data input/output arrangement respectively comprises a signal conductor connected to a contact terminal located externally accessibly on said portable authorization device and adapted to carry out a conductor-bound data exchange.

1     **19.** The data exchange system according to claim 1, wherein said  
2     input/output terminal is a computer terminal connected to  
3     the internet.

1     **20.** The data exchange system according to claim 19, further  
2     comprising a computer at a facility of a manufacturer of  
3     said motor vehicle or a facility of a servicing center for  
4     servicing said motor vehicle, wherein said computer is  
5     connected to and carries out a data exchange with said data  
6     exchange device via the internet and said computer  
7     terminal.

1     **21.** A data exchange system comprising:

2             a motor vehicle including a first data processing  
3     device, a vehicle input/output arrangement connected  
4     directly or indirectly to said first data processing  
5     device, and a mechanical or electronic vehicle lock that  
6     selectively enables and prevents operation of said motor  
7     vehicle;

8             an input/output terminal that is external to and  
9     separate from said motor vehicle and that includes a  
10    terminal processor and a terminal input/output arrangement  
11    connected directly or indirectly to said terminal  
12    processor;

13            a portable mechanical or electronic key that  
14    cooperates with and is required for activating said vehicle  
15    lock to enable operation of said motor vehicle; and

16 a portable data exchange device that is incorporated  
17 in said key, and that comprises a memory, a processor  
18 connected to said memory, and a key input/output  
19 arrangement that is connected to said processor and adapted  
20 to carry out a communication respectively with said vehicle  
21 input/output arrangement and said terminal input/output  
22 arrangement.

1 22. The data exchange system according to claim 21, wherein  
2 each one of said input/output arrangements respectively  
3 comprises a wireless receiver/transmitter adapted to carry  
4 out a wireless reception and transmission of  
5 electromagnetic waves carrying data as said communication.

1 23. The data exchange system according to claim 21, wherein  
2 each one of said input/output arrangements respectively  
3 comprises signal conductors connected to contacts adapted  
4 to carry out a conductor bound reception and transmission  
5 of signals carrying data as said communication.

1 24. A portable handheld device comprising:

2 a portable authorization device required for enabling  
3 operation of a motor vehicle; and

4 a portable data exchange device that is incorporated  
5 in said portable authorization device, and that comprises  
6 a data memory, a data input connected directly or  
7 indirectly to said data memory, and a data output connected  
8 directly or indirectly to said data memory;

9            wherein said data input and said data output are  
10       adapted to communicate with a data processing device  
11       included in the motor vehicle and with a data input/output  
12       terminal that is external and separate from the motor  
13       vehicle.